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[11] Patent Number:

5,284,931

[45] Date of Patent:

Feb. 8, 1994

Springer et al.

[54] INTERCELLULAR ADHESION MOLECULES, AND THEIR BINDING LIGANDS

United States Patent [19]

[75] Inventors: Timothy A. Springer, Newton, Mass.;

Robert Rothlein; Steven D. Marlin, both of Danbury, Conn.; Michael L.

Dustin, University City, Mo.

[73] Assignee: Dana Farber Cancer Institute,

Boston, Mass.

[21] Appl. No.: 515,478

[22] Filed: Apr. 27, 1990

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 456,647, Dec. 22, 1989, which is a continuation-in-part of Ser. No. 45,963, May 4, 1987, which is a continuation-in-part of Ser. No. 115,798, Nov. 2, 1987, which is a continuation-in-part of Ser. No. 155,943, Eeb. 16, 1988, which is a continuation-in-part of Ser. No. 189,813, May 3, 1988, which is a continuation-in-part of Ser. No. 250,446, Sep. 28, 1988, which is a continuation-in-part of Ser. No. 324,481, Mar. 16, 1989, which is a continuation-in-part of Ser. No. 373,882, Jun. 30, 1989, which is a continuation-in-part of Ser. No. 456,647, Dec. 22, 1989.

530/395; 530/808; 530/868; 514/8

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(List continued on next page.)

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[57] ABSTRACT

Pharmaceutical compositions comprising antibodies to intercellular adhesion molecule-1 (ICAM-1 or CD54) are useful in methods of decreasing the severity of inflammation associated with the adhesion of leukocytes to cells vearing ICAM-1. Treatment with anti-ICAM-1 antibodies reduced the severity of inflammation associated with acute organ or tissue rejection and prolonged allograft survival time. Such compositions may optionally contain other immunsuppressive agents.

11 Claims, 25 Drawing Sheets